

- 1 22. (original) The system of claim 19, wherein the laser source is configured to generate
2 the laser bursts with a separation of less than 2.0 milliseconds.
- 1 23. (original) The system of claim 19, wherein the laser burst comprises 1-24 laser
2 pulses.
- 1 24. (original) The system of claim 22, the laser pulses are separated by less than 2.0
2 milliseconds.
- 1 25. (original) The system of claim 23, wherein pulses have pulse widths of less than 100
2 microseconds.
- 1 26. (previously amended) The system of claim 19, wherein the laser applicator comprises a
2 flexible optical fiber with a firing end having a diameter of less than 500 microns.
- 1 27. (original) The system of claim 26, wherein the optical fiber is selected from the
2 group consisting of fused silica fiber and a sapphire fiber.
- 1 28. (original) The system of claim 26, wherein the applicator further comprises structure
2 for shielding unwanted laser light from the vascular tissue.
- 1 29. (original) The system of claim 26, wherein the applicator further comprises means to
2 control a distance of the firing end from the vascular tissue.
- 1 30. (original) The system of claim 29, wherein the means to control the distance of the
2 firing end from the vascular tissue is a shroud structure.
- 1 31. (original) The system of claim 19, wherein applicator is flexible allowing the laser
2 light to be delivered to the vascular tissue at a range of approach angles.
- 1 32. (previously presented) A laser system comprising:
2 a. means to generate bursts of laser light comprising laser pulses;
3 b. means to focus the laser light into a trunk optical fiber; and

- 4 c. flexible endo-probe coupled to the trunk optical fiber, the endo-probe comprises a
5 delivery optical fiber with an input end for receiving laser radiation from the
6 truck fiber and a firing end for exposing a target area of vascular tissue, wherein
7 the target area of vascular tissue is located within the cavity of a body.

1 33. (previously presented) The laser system of claim 32, wherein the flexible endo-
2 probe comprises guide structures through which the delivery fiber extends, wherein guide
3 structure is configured be bent and to guide the firing edge of the delivery optical fiber at
4 preferred angles relative to the target area of the vascular tissue.

1 34. (previously presented) The laser system of claim 32, wherein input end of the
2 delivery optical fiber has a diameter of less than 500 microns.

1 35. (previously presented) The laser system of claim 33, wherein the firing end of the
2 delivery optical fiber has a diameter of 300 micron or less.

1 36. (previously presented) The laser system of claim 32, wherein the firing end of the
2 delivery optical fiber has a diameter in a range of 50 to 225 micron.

1 37. (previously presented) The laser system of claim 32, wherein the guide structure is
2 a tubular housing structure that is bent at an angle between 0 to 90 degrees.

1 38. (previously presented) The laser system of claim 32, wherein the delivery optical
2 fiber is a side firing optical fiber.

1 39. (previously presented) The laser system of claim 32, wherein the guide structure
2 further comprises a shield member extending in front of a portion the firing end of the delivery
3 optical fiber for blocking laser light emitted from the firing end at angles other than the preferred
4 angles.

1 40. (previously presented) The laser system of claim 39, wherein the means to
2 generate bursts of laser light comprises an Er:YAG laser medium.

1 41. (previously presented) The laser system of claim 32, wherein means to generate
2 bursts of laser light is configured to provide between 5 and 200 mJ/per pulse.

- 1 42. (previously presented) The laser system of claim 32, wherein the means to
2 generate bursts of laser light is configured to generate laser pulse with a repetition rate between
3 40 and 10 Hz.
- 1 43. (previously presented) The laser system of claim 32, wherein the means to
2 generate bursts of laser light is configured to generate a burst of laser light that are separations of
3 less than 2.0 milliseconds.
- 1 44. (previously presented) The laser system of claim 32, wherein the means to
2 generate bursts of laser light is configured to generate 1-20 laser pulses for each laser burst.
- 1 45. (previously presented) The laser system of claim 44, wherein means to generate
2 bursts of laser light is configured to generate the laser pulses at pulse separations of less than 2.0
3 milliseconds.
- 1 46. (previously presented) The laser system of claim 32, wherein the delivery optical
2 fiber is selected from the group consisting of a fused silica fiber and sapphire fiber.
- 1 47. (previously presented) The laser system of claim 32, wherein the trunk fiber is a
2 sapphire optical fiber.